ABSTRACT

Based on software developed with use-cases, this patent application presents a suite of metrics for the Product/Process (PP) complexity of the software system as well the PP complexity of each stage in the software development process—analysis, design, and test. The metrics is important for software quality assurance—Validation and Verification (V&V) as well as for understanding new complexities brought into software development by new technologies.

The metrics can be collected based on the two most important documents of use-case software development—scenario and state diagrams. All metrics are CASE tool computable. Thus, each iterative or incremental development process can be quantitatively measured and compared without incurring extra cost or load on the project team.

Efficiency metrics for implementation and test stages, normalization rules and logic-metrics for business tables are also presented. The three-level software visualization approach suggested in this patent application may have impact on graphical programming or direct transformation.